

wide terminal type flat chip resistors

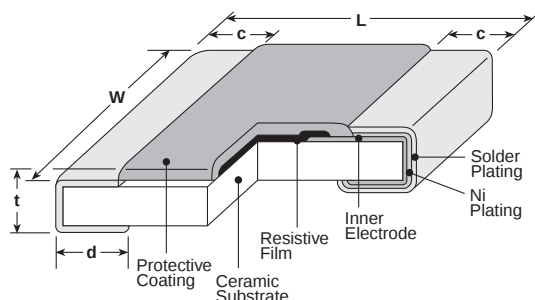


features

- Wide-side termination (reverse-geometry) type flat chip resistor
- High reliability and performance with T.C.R. $\pm 100 \times 10^{-6}/K$, resistance tolerance $\pm 0.5\%$
- Products with lead-free terminations meet EU RoHS requirements. EU RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- AEC-Q200 Qualified



dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm)					
	L	W	c	d	t	
1E (0204)	.020±.002 (0.5±0.05)	.039±.002 (1.0±0.05)	.006±.002 (0.15±0.05)	.006±.002 (0.15±0.05)	.014±.002 (0.35±0.05)	
1J (0306)	.031±.004 (0.8±0.1)	.063±.004 (1.6±0.1)	.006±.004 (0.15±0.1)	.008±.004 (0.2±0.1)	.018±.004 (0.45±0.1)	
2A (0508)	.049±.006 (1.25±0.15)	.079±.006 (2.0±0.15)	.012±.008 (0.3±0.2)	.014±.008 (0.35±0.2)	.022±.004 (0.55±0.1)	
2B (0612)	.063±.006 (1.6±0.15)	.126±.008 (3.2±0.2)	.012±.008 (0.3±0.2)	.018±.006 (0.45±0.15)	.024±.004 (0.6±0.1)	
2H (1020)	.098±.006 (2.5±0.15)	.197±.006 (5.0±0.15)	.016±.008 (0.4±0.2)	.030±.006 (0.75±0.15)		
3A (1225)	.122±.006 (3.1±0.15)	.252±.006 (6.3±0.15)	.018±.008 (0.45±0.2)			

ordering information

WK73R	1J	T	TE	33L0	F
Type	Size ¹	Termination Material	Packaging	Nominal Resistance	Resistance Tolerance
WK73R	1E: 0.33W 1J: 0.5W, 0.66W 2A: 0.75W, 1W 2B: 0.75W, 1.5W 2H: 2W 3A: 3W	T: Sn	TP: 0204: 2mm pitch punched paper TD: 0306, 0508, 0612: 4mm pitch punched paper TE: 1020, 1225: 4mm pitch embossed plastic For further information on packaging, please refer to Appendix A	$\pm 1\%$: 3 significant figures + 1 multiplier "R" indicates decimal on value <100 Ω $\pm 5\%$: 2 significant figures + 1 multiplier "R" indicates decimal on values <10 Ω All values less than 0.1 Ω (100m Ω) are expressed in m Ω with "L" as decimal. Ex: 33m Ω , 1% = 33L0	D: $\pm 0.5\%$ F: $\pm 1\%$ J: $\pm 5\%$

applications and ratings

Part Designation	Power Rating ¹	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (X 10 ⁻⁶ /K)	Resistance Range (Ω)			Maximum Working Voltage	Maximum Overload Voltage	Operating Temp. Range
					D±0.5% E-24/E-96	F±1% E-24/E-96	J±5% E-24			
WK73R1E (0204)	0.33W	70°C	125°C	±100	—	10 -1M	10 - 1M	75V	100V	-55°C to +155°C
WK73R1J (0306)	0.5W	70°C	125°C	±100	—	10k -1M	10k -1M	150V	200V	
	0.66W					10 - 9.76k	10 - 9.1k			
WK73R2A (0508)	0.75W	70°C	125°C	±100	20.5k - 1M	20.5k - 1M	22k-1M	200V	400V	
	1.0W		125°C	±100	10 - 20k	10 - 20k	10 - 20k			
WK73R2B (0612)	0.75W	70°C	125°C	±100	10k - 1M	10k - 1M	10k - 1M	200V	400V	
	1.5W		125°C	±100	10 - 9.76k	10 - 9.76k	10 - 9.1k			
WK73R2H (1020)	2W	70°C	125°C	±100	—	10 - 430k	10 - 430k	200V	400V	
				±200	—	432k - 1M	470k - 1M			
WK73R3A (1225)	3W	70°C	125°C	±100	—	10 - 330k	10 - 330k	200V	400V	
				±200	—	332k - 1M	360k - 1M			

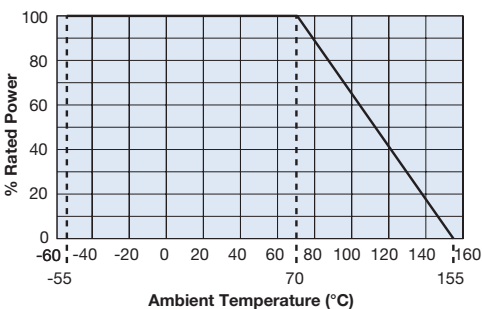
Rated voltage = $\sqrt{\text{Power rating} \times \text{resistance value}}$ or max. working voltage, whichever is lower

¹ If the terminal part temperature exceeds the rated terminal part temperature, even if it is below the rated ambient temperature, apply the derating curve for the terminal part temperature.

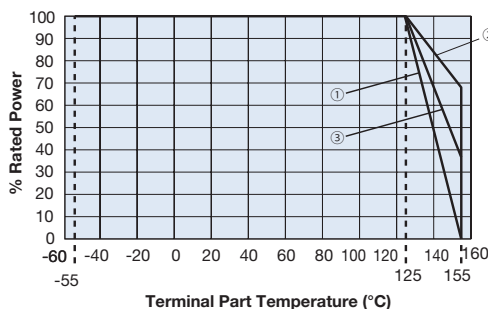
If any questions arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature", please give priority to the "Rated Terminal Part Temperature." For more details on derating click here ["Derating Curves – Caution & Terms."](#)

environmental applications

Derating Curve



For resistors operated at an ambient temperature of 70°C or higher, the power rating shall be derated in accordance with the above derating curve.

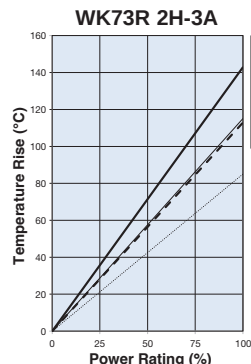
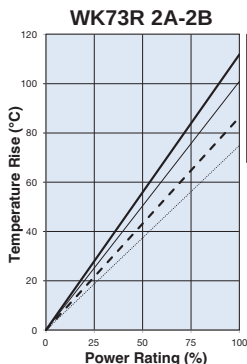
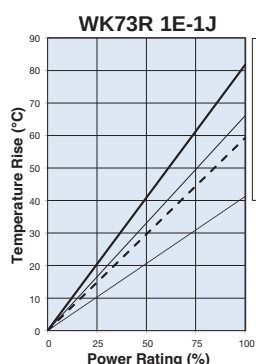


For resistors operated at a terminal part temperature of 125°C or above, the power rating shall be derated in accordance with the derating curve.

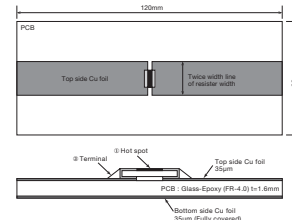
For more details on derating click here ["Derating Curves – Caution & Terms."](#)

No.	Type	Resistance Range(Ω)	Power rating
①	1E	7.68 k-1M	0.33W
	1J	10k-1M	0.5W
	2A	20.5k-1M	0.75W
	2B	10k-1M	0.75W
②	1E	10-7.5k	0.33W
	1J	10-9.76k	0.66W
	2A	10-20k	1W
	2H	10-1M	2W
③	3A	10-1M	3W
	2B	10-9.76k	1.5W

Temperature Rise

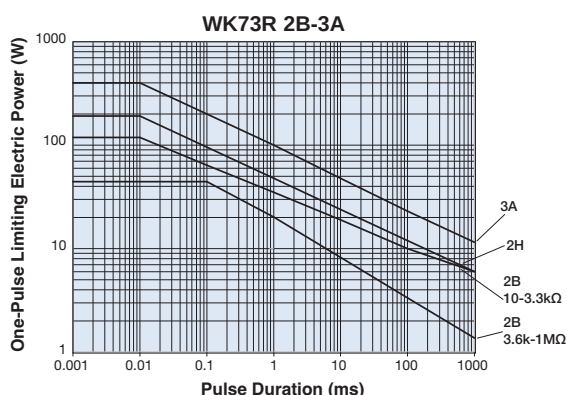
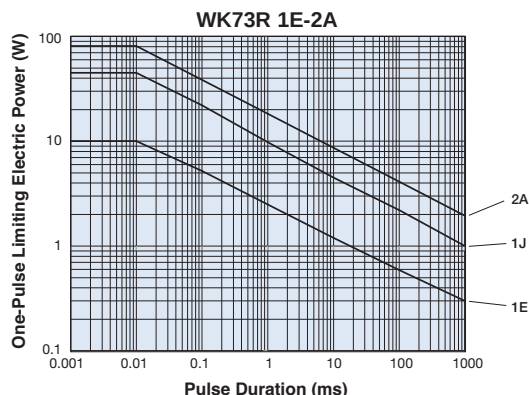


Simulated and Measurement Conditions



Temperature rise is simulated and measured under our conditions. So, the values will vary depending on the operating conditions and PCB used.

One-Pulse Limiting Electric Power



The maximum applicable voltage is equal to the max. overload voltage. Please ask us about the resistance characteristic of continuous applied pulse. The pulse endurance values are not assured values, so be sure to check the products on the actual equipment used.

Performance Characteristics

Parameter	Requirement $\Delta R \pm(\%+0.005\Omega)$		Test Method								
	Limit	Typical									
Resistance	Within specified tolerance	—	25°C								
T.C.R.	Within specified T.C.R.	—	+25°C/-55°C and +25°C/+125°C								
Overload (Short time)	$\pm 2\%$	$\pm 0.2\%$	Overload wattage for 5s								
			Type (Resistance Range/ Ω)	1E	1J	2A		2B		2H	3A
			10~20k	20.5k~1M	10~10k	10.2k~1M					
Overload Wattage	1.32W	3.125W	4W	3W	6W	4.688W	8W	12W			
Resistance to Solder Heat	$\pm 1\%$	$\pm 0.2\%$	260°C $\pm$ 5°C, 10 seconds $\pm$ 1 second								
Bending Test	$\pm 1\%$	$\pm 0.1\%$	Holding point 90mm, Bending 1 time, Bending 5mm								
Rapid Change of Temperature	$\pm 2\%$	$\pm 1\%$	-55°C (30 minutes) / +125°C (30 minutes), 1000 cycles								
Moisture Resistance	$\pm 3\%$: 1E $\pm 2\%$: All others	$\pm 1\%$: 1E $\pm 0.2\%$: All others	40°C $\pm$ 2°C, 90%~95% RH, 1000 hours; 1.5 hr ON, 0.5 hr OFF cycle								
Endurance at 70°C or Rated Terminal Part Temperature	$\pm 3\%$: 1E $\pm 2\%$: All others	$\pm 1\%$: 1E $\pm 0.2\%$: All others	70°C $\pm$ 2°C or rated terminal part temperature $\pm$ 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle								
High Temperature Exposure	$\pm 1\%$	$\pm 0.2\%$	+155°C, 1000 hours								

Additional environmental applications can also be found at www.koaspeer.com